

## PATENT COOPERATION TREATY

PCT

NOTIFICATION OF THE RECORDING  
OF A CHANGE(PCT Rule 92bis.1 and  
Administrative Instructions, Section 422)

From the INTERNATIONAL BUREAU

To:

LIDBETTER, Timothy, Guy, Edwin  
BT Group Legal Services  
Intellectual Property Department  
8th Floor, Holborn Centre  
120 Holborn  
London EC1N 2TE  
ROYAUME-UNIDate of mailing (day/month/year)  
03 juillet 2001 (03.07.01)Applicant's or agent's file reference  
A25822 WO

## IMPORTANT NOTIFICATION

International application No.  
PCT/GB00/03087International filing date (day/month/year)  
10 août 2000 (10.08.00)

## 1. The following indications appeared on record concerning:

☒ the applicant ☐ the inventor ☐ the agent ☐ the common representative

## Name and Address

BRITISH TELECOMMUNICATIONS LIMITED  
COMPANY  
81 Newgate Street  
London, EC1A 7AJ  
United Kingdom

## State of Nationality

GB

## State of Residence

GB

Telephone No.

Facsimile No.

Teleprinter No.

## 2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:

☒ the person ☒ the name ☒ the address ☐ the nationality ☐ the residence

## Name and Address

STRATOS GLOBAL LIMITED  
6th Floor  
Finsbury Square  
London EC2A 1AE  
United Kingdom

## State of Nationality

GB

## State of Residence

GB

Telephone No.

Facsimile No.

Teleprinter No.

## 3. Further observations, if necessary:

The person in box 1 has transferred the assignment to the person in box 2.

## 4. A copy of this notification has been sent to:

☒ the receiving Office ☒ the designated Offices concerned  
☒ the International Searching Authority ☐ the elected Offices concerned  
☐ the International Preliminary Examining Authority ☐ other:The International Bureau of WIPO  
34, chemin des Colombettes  
1211 Geneva 20, Switzerland

Authorized officer

Lazar Joseph Panakal

Facsimile No.: (41-22) 740.14.35

Telephone No.: (41-22) 338.83.38

## PATENT COOPERATION TREATY

PCT

## NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Commissioner  
 US Department of Commerce  
 United States Patent and Trademark  
 Office, PCT  
 2011 South Clark Place Room  
 CP2/5C24  
 Arlington, VA 22202  
 ETATS-UNIS D'AMERIQUE  
 in its capacity as elected Office

Date of mailing (day/month/year) 03 July 2001 (03.07.01)	
International application No. PCT/GB00/03087	Applicant's or agent's file reference A25822 WO
International filing date (day/month/year) 10 August 2000 (10.08.00)	Priority date (day/month/year) 25 August 1999 (25.08.99)
Applicant CLARKE, Matthew, Alexander et al	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:  
 22 March 2001 (22.03.01)

☐ in a notice effecting later election filed with the International Bureau on:  
 \_\_\_\_\_

2. The election ☒ was

☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer Lazar Joseph Panakal
Facsimile No.: (41-22) 740.14.35	Telephone No.: (41-22) 338.83.38

## PATENT COOPERATION TREATY

PCT

From the INTERNATIONAL BUREAU

NOTIFICATION OF THE RECORDING  
OF A CHANGE(PCT Rule 92bis.1 and  
Administrative Instructions, Section 422)

To:

SKONE JAMES, Robert, E.  
Gill Jennings & Every  
Broadgate House  
7 Eldon Street  
London EC2M 7LH  
ROYAUME-UNI

Date of mailing (day/month/year) 07 September 2001 (07.09.01)	IMPORTANT NOTIFICATION
Applicant's or agent's file reference A25822 WO	
International application No. PCT/GB00/03087	International filing date (day/month/year) 10 August 2000 (10.08.00)

1. The following indications appeared on record concerning:		
<input type="checkbox"/> the applicant	<input type="checkbox"/> the inventor	<input checked="" type="checkbox"/> the agent
<input type="checkbox"/> the common representative		
Name and Address LIDBETTER, Timothy, Guy, Edwin BT Group Legal Services Intellectual Property Department 8th Floor, Holborn Centre 120 Holborn London EC1N 2TE United Kingdom	State of Nationality	State of Residence
	Telephone No. 020 7492 8114	
	Facsimile No. 020 7242 0838	
	Teleprinter No.	
2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:		
<input checked="" type="checkbox"/> the person	<input checked="" type="checkbox"/> the name	<input checked="" type="checkbox"/> the address
<input type="checkbox"/> the nationality		
<input type="checkbox"/> the residence		
Name and Address SKONE JAMES, Robert, E. Gill Jennings & Every Broadgate House 7 Eldon Street London EC2M 7LH United Kingdom	State of Nationality	State of Residence
	Telephone No. 44 20 7377 1377	
	Facsimile No. 44 20 7377 1310	
	Teleprinter No.	
3. Further observations, if necessary:		
4. A copy of this notification has been sent to:		
<input checked="" type="checkbox"/> the receiving Office	<input type="checkbox"/> the designated Offices concerned	
<input type="checkbox"/> the International Searching Authority	<input checked="" type="checkbox"/> the elected Offices concerned	
<input checked="" type="checkbox"/> the International Preliminary Examining Authority	<input checked="" type="checkbox"/> other: former agent	

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer Ingrid AULICH Telephone No.: (41-22) 338.83.38
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## PCT COOPERATION TREATY

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NOTIFICATION OF THE RECORDING  
OF A CHANGE(PCT Rule 92bis.1 and  
Administrative Instructions, Section 422)

From the INTERNATIONAL BUREAU

To:

SKONE JAMES, Robert, E.  
Gill Jennings & Every  
Broadgate House  
7 Eldon Street  
London EC2M 7LH  
ROYAUME-UNI

Date of mailing (day/month/year) 10 September 2001 (10.09.01)	<b>IMPORTANT NOTIFICATION</b>
Applicant's or agent's file reference A25822 WO	
International application No. PCT/GB00/03087	International filing date (day/month/year) 10 August 2000 (10.08.00)

1. The following indications appeared on record concerning:		
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<input type="checkbox"/> the common representative		
Name and Address LIDBETTER, Timothy, Guy, Edwin BT Group Legal Services Intellectual Property Department 8th Floor, Holborn Centre 120 Holborn London EC1N 2TE United Kingdom	State of Nationality	State of Residence
	Telephone No. 020 7492 8114	
	Facsimile No. 020 7242 0838	
	Teleprinter No.	
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<input checked="" type="checkbox"/> the person	<input type="checkbox"/> the name	<input type="checkbox"/> the address
<input type="checkbox"/> the nationality	<input type="checkbox"/> the residence	
Name and Address SKONE JAMES, Robert, E. Gill Jennings & Every Broadgate House 7 Eldon Street London EC2M 7LH United Kingdom	State of Nationality	State of Residence
	Telephone No. 44 20 7377 1377	
	Facsimile No. 44 20 7377 1310	
	Teleprinter No.	
3. Further observations, if necessary:		
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<input checked="" type="checkbox"/> the receiving Office	<input type="checkbox"/> the designated Offices concerned	
<input type="checkbox"/> the International Searching Authority	<input checked="" type="checkbox"/> the elected Offices concerned	
<input checked="" type="checkbox"/> the International Preliminary Examining Authority	<input checked="" type="checkbox"/> other: former agent	

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer Ingrid AULICH Telephone No.: (41-22) 338.83.38
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# PATENT COOPERATION TREATY

From the  
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

## PCT

To:

SKONE JAMES, Robert E.  
GILL JENNINGS & EVERY  
Broadgate House  
7 Eldon Street  
GB-EC2M 7LH London  
GRANDE BRETAGNE

RECEIVED

24 DEC 2001

GILL JENNINGS & EVERY

NOTIFICATION OF TRANSMITTAL OF  
THE INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT  
(PCT Rule 71.1)

Date of mailing  
(day/month/year)

21.12.2001

Applicant's or agent's file reference  
11696.0047

### IMPORTANT NOTIFICATION

International application No.  
PCT/GB00/03087

International filing date (day/month/year)  
10/08/2000

Priority date (day/month/year)  
25/08/1999

Applicant

STRATOS GLOBAL LIMITED et al.

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.

#### 4. REMINDER

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

Name and mailing address of the IPEA/

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D-80298 Munich  
Tel. +49 89 2399 - 0 Tx: 523656 epmu d  
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Authorized officer

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(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
1 March 2001 (01.03.2001)

PCT

(10) International Publication Number  
**WO 01/15338 A1**

(51) International Patent Classification<sup>7</sup>: H04B 7/185,  
H04Q 7/36

BALMBRA, Duncan, Paul [GB/GB]; 10 Denbeigh  
Place, Caversham, Reading, Berkshire RG1 8QE (GB).

(21) International Application Number: PCT/GB00/03087

(74) Agent: LIDBETTER, Timothy, Guy, Edwin: BT Group  
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(22) International Filing Date: 10 August 2000 (10.08.2000)

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DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR,  
HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,  
LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ,  
NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM,  
TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

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TELECOMMUNICATIONS PUBLIC LIMITED  
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7AJ (GB).

(84) Designated States (*regional*): ARIPO patent (GH, GM,  
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian  
patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European  
patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE,  
IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG,  
CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

(72) Inventors; and

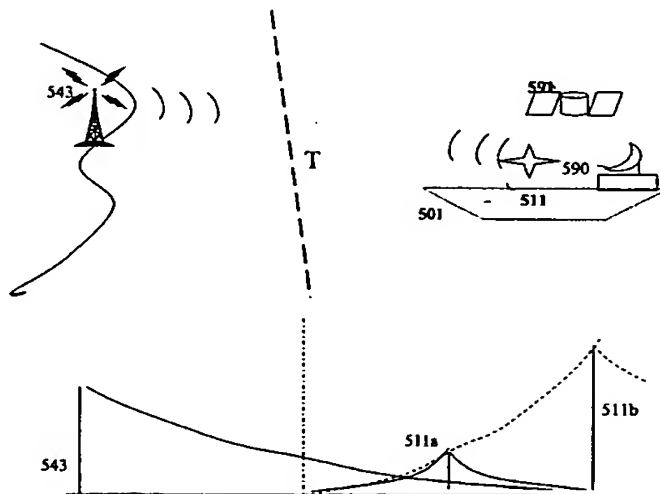
(75) Inventors/Applicants (*for US only*): CLARKE,  
Matthew, Alexander [GB/GB]; Windmill Cottage,  
Inworth Lane, Wakes Colne, Essex CO6 2BG (GB).

Published:

— With international search report.

[Continued on next page]

(54) Title: SYSTEM AND APPARATUS FOR AVOIDING INTERFERENCE BETWEEN FIXED AND MOVEABLE BASE  
TRANSCEIVER STATION



(57) Abstract: Apparatus for providing telephone connection between one or more cellular radio telephones and a cellular radio switching system, comprises at least one moveable base transceiver station (511) for providing a radio connection with the cellular radio telephones, and having means for detecting whether the moveable base transceiver stations are in range of a fixed base transceiver station (543), and means for controlling the output of the moveable base transceiver stations (511) when such a fixed base transceiver station is detected such that transmissions from the moveable base stations do not interfere with transmissions from the fixed base station within a predetermined area surrounding the fixed base station (543). The system may also include a position finding system (590, 591), linked to the output control such that transmissions from the transmitter (511) cannot be detected within a predetermined area (T).

WO 01/15338 A1



*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

# PATENT COOPERATION TREATY

# PCT

REC'D 28 DEC 2001	
WIPO	PCT

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT



(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 11696.0047	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/GB00/03087	International filing date (day/month/year) 10/08/2000	Priority date (day/month/year) 25/08/1999
International Patent Classification (IPC) or national classification and IPC H04B7/185		
Applicant STRATOS GLOBAL LIMITED et al.		

- This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
- This REPORT consists of a total of 7 sheets, including this cover sheet.  
  
☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).  
  
 These annexes consist of a total of 5 sheets.

- This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☒ Certain defects in the international application
- VIII ☒ Certain observations on the international application

Date of submission of the demand  22/03/2001	Date of completion of this report  21.12.2001
Name and mailing address of the international preliminary examining authority:   European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer  Staeger, R  Telephone No. +49 89 2399 8124  



**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/GB00/03087

**I. Basis of the report**

1. With regard to the elements of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):  
**Description, pages:**

1,4-8	as originally filed	
2,2a,3	with telefax of	05/12/2001

**Claims, No.:**

1-8	with telefax of	05/12/2001
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**Drawings, sheets:**

1/5-5/5	as originally filed
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2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
  - ☐ the language of publication of the international application (under Rule 48.3(b)).
  - ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).
3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:
- ☐ contained in the international application in written form.
  - ☐ filed together with the international application in computer readable form.
  - ☐ furnished subsequently to this Authority in written form.
  - ☐ furnished subsequently to this Authority in computer readable form.
  - ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
  - ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.
4. The amendments have resulted in the cancellation of:

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/GB00/03087

- ☐ the description, pages:  
☐ the claims, Nos.:  
☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

## V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

### 1. Statement

Novelty (N)	Yes:	Claims	2,6
	No:	Claims	1,3-5, 7-8 No
Inventive step (IS)	Yes:	Claims	
	No:	Claims	2, 6 No
Industrial applicability (IA)	Yes:	Claims	1-8
	No:	Claims	

2. Citations and explanations  
see separate sheet

## VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:  
see separate sheet

## VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:  
see separate sheet

**V. Reasoned statement with regard to novelty and inventive step:**

1.) Reference is made to the following documents:

D1: GB-A-2 282 299 (MOTOROLA LTD) 29 March 1995 (1995-03-29)

D3: EP-A-0 932 266

The document D3 was not cited in the international search report. A copy of the document is appended hereto.

- 2a. It is considered that D1 discloses a moveable base station containing means to reduce the transmit power, thereby this means automatically act as means to reduce the effective geographic range of that base station.  
Thus, claim 1 is formulated in such a general manner that the features of said claim can be read from D1. In the following references to D1 will be indicated in brackets.

Document D1, in particular figure 1, abstract, claim 1; p. 1, l. 25 to p. 2, l. 17; p. 2, l. 32-34; p. 3, l. 14 to p. 4, l. 4; p. 5, l. 20-30; p. 6, l. 8-20, discloses as in claim 1:

Apparatus suitable for providing telephone connection between one or more cellular radio telephones and a cellular radio switching system (implicit), the apparatus comprising at least one moveable base transceiver station (20) for providing a radio connection with the cellular radio telephones, means for detecting (21, 18) whether the moveable base transceiver station (20) is in range of a fixed base transceiver station (16), and means for reducing the effective geographic range (reduce transmit power level also reduces effective geographic range) of the moveable base transceiver station (20) when such a fixed base transceiver station (16) is detected such that the effective geographic range remains outside a predetermined geographic area surrounding the fixed base station (can be interpreted on any predetermined area in D1 surrounding very close a fixed base station).

- b. Equivalent objections have to be raised for corresponding method claim 5. Additionally, claim 5 contains severe lacks of clarity (see section VIII, below).

- c. Moreover, prima facie the features of claim 1 can also be read from D3, figures 1-2; claims 1-6; col. 3, l. 54 to col. 4, l. 10, whereby the transponder (4) acts as a moveable base transceiver station.

D3 discloses a movable base site onboard of an aircraft. D3 is mainly related to reduce this base site transmit power when the aircraft is in landing or taking off. In order to avoid in these situations interference with the onboard avionics. This means in such situation the effective geographic range of the onboard base station is reduced. Automatically this reduction falls under the reduction condition as contained in claim 1, because to avoid interference with the nearby avionics this power reduction must be strong. Thereby, as a side effect the effective geographic range of the moveable base station remains outside of most geographic areas surrounding a fixed base station. Thus, the transponder of D3 would fall under the scope as claimed in claim 1. Furthermore, the core features of claim 1 could also be interpreted from p. 3, l. 13-21; wherein the power is reduced to zero (disabled). Then no effective geographic range of the mobile base station exists and would thus remain outside of any predetermined area surrounding a fixed base station.

Hence, claims 1 and 5 of the present application does not satisfy the criterion set forth in Article 33(2) PCT, because the subject-matter of said claims is not new.

- d. It should furthermore be noted that even if novelty could be argued based on a minor difference than this difference is prima facie not going beyond routine options for the skilled person in the field of radio communication and therefore does not contribute an inventive step subject-matter (Article 33(3) PCT).

- 3a. Dependent claims do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty, the reasons being as follows:

Claims 3 and 7: D1, OMC of is considered as **suitable** for disabling some or all of the moveable base stations. D3, see col. 3, l. 54 ff; figure 2 (8); claim 6.

Claims 4 and 8: D1, OMC controls power level and frequency of the output according to GPS determined position and stored (predetermined) frequency and

position information.

- b. Dependent claims 2 and 6 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of inventive step, because means for limiting the time delay is considered is merely one out of a limited number of routine options to limit the effective geographic range of a base station and thus is not considered inventive.

**VII Certain defects in the international application:**

- 1.) To meet the requirements of Rule 5.1(a)(ii) PCT, documents D1 and D3 should be identified in the description and the relevant background art disclosed therein should be briefly discussed.
- 2.) When filing an amended apparatus claim 1, the claim 1 should be filed in the two-part form in accordance with Rule 6.3(b) PCT, with those features known in combination from the prior art being placed in a preamble (Rule 6.3(b)(I) PCT) and with the remaining features being included in a characterising part (Rule 6.3(b)(ii) PCT).
- 3.) If necessary, the description should be adapted to correctly reflect any changes in the scope of the claimed invention.
- 4.) The features of the claims are not provided with reference signs placed in parentheses (Rule 6.2(b) PCT).

**VIII Certain observations:**

- 1. In claim 5, l. 33 there are missing the lines corresponding to the lines 8-12 of claim 1. Thereby, an embodiment has been created which directly by detection determines an effective range which remains outside a predetermined area surrounding the fixed base station. This leads to an uncertainty how detecting can include "reducing effective range". Such an embodiment is unclear and not

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

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International application No. PCT/GB00/03087

supported in the description. The applicants should have had used in claim 5, line 33, features corresponding to lines 8-12 of claim 1.

The term "do not" in line 35 appears to be an extra negation to the word "outside" and therefore the term "do not" should have been deleted in order to avoid confusion in the claimed scope.

2. It could be assumed that it might be intended at the end of claims 1 and 5 that instead of "predetermined geographic area" or "predetermined area" it could be intended "predetermined **effective geographic area**". Otherwise any predetermined area surrounding the fixed base station would fall under the claims.

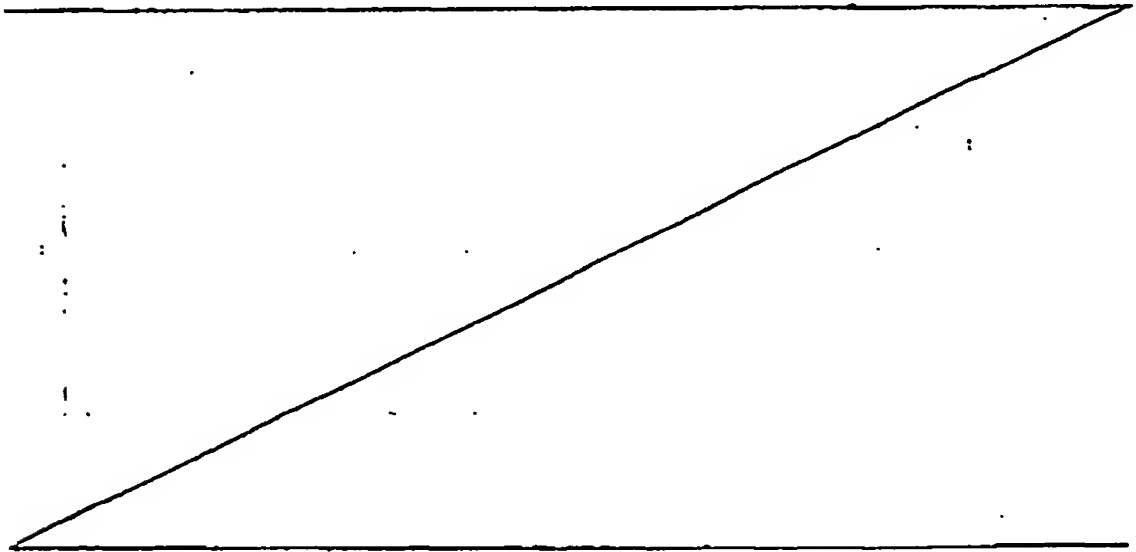
developed which allow call diversions to be set up to allow calls made to the user's cellular number to be transferred to a destination node of the tracking radio system. The destination node may be an onboard handset temporarily allocated the user's cellular identity, or it may be an onboard base station capable of wireless connection to the user's own cellular telephone. Systems of this general kind have been disclosed in International Patent Applications WO99/12227 (Nokia), WO94/28684 (Nordictel) and WO98/26521 (Ericsson); European Patent Applications 0920147 (Alcatel) and 0915577 (Rohde & Schwartz), and United Kingdom Patent Application 2310973 (Motorola). An onboard base station can be integrated with other onboard systems, allowing local control of the base station's transmitter, and those of the mobile units with which it is co-operating, so as to keep their power within permitted limits.

There are a number of circumstances in which a cellular telephone system on board a ship could interfere with ordinary cellular base stations nearby. For example, when a ship is close to shore, the onboard cellular base station may be detectable on shore, and interfere with onshore stations. Within territorial waters use of the system may also breach regulatory conditions.

2a

According to the invention, there is provided apparatus for providing telephone connection between one or more cellular radio telephones and a cellular radio switching system, comprising at least one moveable base transceiver station for providing a radio connection with the radio cellular radio telephones, means for detecting whether the moveable base transceiver station is in range of a fixed base transceiver station, and means for reducing the effective geographic range of the moveable base transceiver station when such a fixed base transceiver station is detected such that the effective geographic range remains outside a predetermined geographic area surrounding the fixed base station.

According to another aspect, there is provided a method for providing telephone connection between one or more cellular radio telephones and a cellular radio switching system, comprising one or more moveable base transceiver stations, wherein the operation of the moveable base transceiver stations is detected such that an effective range of the moveable base transceiver stations do not remains outside a predetermined area surrounding the fixed base station.





The output may be controlled by limiting the permitted time delay between the moveable base transceiver station and any co-operating mobile units, or by disabling  
5 some or all of the moveable base transceiver stations. In addition, the output may be controlled by detecting the geographical location of the moveable base transceiver stations, and controlling their output according to their position, using predetermined positional conditions.

Embodiments of the invention will now be described with reference to the  
10 Figures, in which:

Figures 1, 2 and 3 illustrate three embodiments of the invention.

Figure 4 illustrates the power control process of the invention.

Figure 5 is a flow chart showing a call diversion process, for use when the system has to be temporarily shut down.

15 The following embodiments illustrate the invention using a standard switched cellular network. However, the invention is applicable to other cellular networks, such as packet networks used to carry data over a distributed computer network such as the "Internet", carrying messages using formats such as the "Internet Protocol" (IP). Thus, unless the context clearly demands otherwise, any reference in this  
20 specification to switching includes the equivalent routing functions in a packet network of this kind.

Three embodiments of the invention will now be described, by way of example, with reference to Figures 1 to 3 of the drawings respectively. These embodiments are all based on the system architecture of the GSM (Global System for  
25 Mobile radio) standard, and are intended for use on board a ship. These embodiments differ in the location of the various components of the GSM system architecture, and the position of the satellite link in that architecture.

In all three embodiments, the system can be categorised into two main components: namely the shipboard part 501 and the fixed part 502, communicating  
30 with each other through a satellite connection 506. The fixed part 502 is itself in two parts, namely a satellite earth station 503 and a public land mobile network (PLMN) 504, which is in turn interconnected with other mobile networks 507 and fixed networks 505 to allow calls to be made between users of different networks.

CLAIMS

1. Apparatus for providing telephone connection between one or more cellular radio telephones and a cellular radio switching system, the apparatus comprising at least one movable base transceiver station for providing a radio connection with the radio cellular telephones, means for detecting whether the moveable base transceiver station is in range of a fixed base transceiver station, and means for reducing the effective geographic range of the moveable base transceiver station when such a fixed base transceiver station is detected such that the effective geographic range remains outside a predetermined geographic area surrounding the fixed base station.
2. Apparatus according to claim 1, wherein the means for reducing the effective geographic range comprises means for limiting the permitted time delay between the moveable base transceiver stations and any co-operating mobile units.
3. Apparatus according to claim 1 or 2, further comprising means for disabling a moveable base transceiver station in response to said moveable base transceiver station entering said predetermined area.
4. Apparatus according to claim 1, 2 or 3, wherein the means for reducing the effective geographic range comprises means for detecting the geographical location of the moveable base transceiver station, and reducing its effective geographic range according to its position, using to predetermined positional conditions.
5. A method for providing telephone connection between one or more cellular radio telephones and a cellular radio switching system, comprising one or more movable base transceiver stations, wherein the operation of the moveable base transceiver stations is detected such that an effective range of the moveable base transceiver stations do not remains outside a predetermined area surrounding the fixed base station.

6. A method according to claim 5, wherein the effective geographic range is reduced by limiting the permitted time delay between the moveable base transceiver stations and any co-operating mobile units.
- 5 7. The method according to claim 5 or 6, wherein a movable base station is disabled in response to the movable base station entering the predetermined area.
8. A method according to claim 5, 6 or 7, wherein the effective geographic range is reduced by detecting the  
10 geographical location of the moveable base transceiver stations, and controlling their output according to their position, according to predetermined positional conditions.

# PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

To:  
BT GROUP LEGAL SERVICES  
Intellectual Property Department  
Attn. LIDBETTER, T.  
Holborn Centre, 8TH Floor  
120 Holborn  
LONDON EC1N 2TE  
UNITED KINGDOM

**PCT**

RECEIVED

20 OCT 2000

IP FORMALITIES

NOTIFICATION OF TRANSMITTAL OF  
THE INTERNATIONAL SEARCH REPORT  
OR THE DECLARATION

(PCT Rule 44.1)

ACTION DUE

20 Dec 2000  
PCT SR Rec'd-Award

Date of mailing  
(day/month/year)

20/10/2000

Applicant's or agent's file reference

A25822 WO

claims

FOR FURTHER ACTION

See paragraphs 1 and 4 below

International application No.

PCT/GB 00/03087

International filing date  
(day/month/year)

10/08/2000

Applicant

BRITISH TELECOMMUNICATIONS PUBLIC LIMITED COMPANY

1. ☒ The applicant is hereby notified that the International Search Report has been established and is transmitted herewith.

Filing of amendments and statement under Article 19:

The applicant is entitled, if he so wishes, to amend the claims of the International Application (see Rule 46):

**When?** The time limit for filing such amendments is normally 2 months from the date of transmittal of the International Search Report; however, for more details, see the notes on the accompanying sheet.

**Where?** Directly to the International Bureau of WIPO  
34, chemin des Colombettes  
1211 Geneva 20, Switzerland  
Fascimile No.: (41-22) 740.14.35

For more detailed instructions, see the notes on the accompanying sheet.

2. ☐ The applicant is hereby notified that no International Search Report will be established and that the declaration under Article 17(2)(a) to that effect is transmitted herewith.

3. ☐ With regard to the protest against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:

☐ the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.

☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. Further action(s): The applicant is reminded of the following:

Shortly after 18 months from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90bis.1 and 90bis.3, respectively, before the completion of the technical preparations for international publication.

Within 19 months from the priority date, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase until 30 months from the priority date (in some Offices even later).

Within 20 months from the priority date, the applicant must perform the prescribed acts for entry into the national phase before all designated Offices which have not been elected in the demand or in a later election within 19 months from the priority date or could not be elected because they are not bound by Chapter II.

Name and mailing address of the International Searching Authority

European Patent Office, P.B. 5818 Patentlaan 2  
NL-2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3016

Authorized officer

Liliane Van Vezzen-Peron

IPES ENTRY CHECKING

RECORD CREATED/EDITED

CHECKED

## NOTES TO FORM PCT/ISA/220

These Notes are intended to give the basic instructions concerning the filing of amendments under article 19. The Notes are based on the requirements of the Patent Cooperation Treaty, the Regulations and the Administrative Instructions under that Treaty. In case of discrepancy between these Notes and those requirements, the latter are applicable. For more detailed information, see also the PCT Applicant's Guide, a publication of WIPO.

In these Notes, "Article", "Rule", and "Section" refer to the provisions of the PCT, the PCT Regulations and the PCT Administrative Instructions respectively.

### INSTRUCTIONS CONCERNING AMENDMENTS UNDER ARTICLE 19

The applicant has, after having received the international search report, one opportunity to amend the claims of the international application. It should however be emphasized that, since all parts of the international application (claims, description and drawings) may be amended during the international preliminary examination procedure, there is usually no need to file amendments of the claims under Article 19 except where, e.g. the applicant wants the latter to be published for the purposes of provisional protection or has another reason for amending the claims before international publication. Furthermore, it should be emphasized that provisional protection is available in some States only.

#### What parts of the international application may be amended?

Under Article 19, only the claims may be amended.

During the international phase, the claims may also be amended (or further amended) under Article 34 before the International Preliminary Examining Authority. The description and drawings may only be amended under Article 34 before the International Examining Authority.

Upon entry into the national phase, all parts of the international application may be amended under Article 28 or, where applicable, Article 41.

#### When?

Within 2 months from the date of transmittal of the international search report or 16 months from the priority date, whichever time limit expires later. It should be noted, however, that the amendments will be considered as having been received on time if they are received by the International Bureau after the expiration of the applicable time limit but before the completion of the technical preparations for international publication (Rule 46.1).

#### Where not to file the amendments?

The amendments may only be filed with the International Bureau and not with the receiving Office or the International Searching Authority (Rule 46.2).

Where a demand for international preliminary examination has been/is filed, see below.

#### How?

Either by cancelling one or more entire claims, by adding one or more new claims or by amending the text of one or more of the claims as filed.

A replacement sheet must be submitted for each sheet of the claims which, on account of an amendment or amendments, differs from the sheet originally filed.

All the claims appearing on a replacement sheet must be numbered in Arabic numerals. Where a claim is cancelled, no renumbering of the other claims is required. In all cases where claims are renumbered, they must be renumbered consecutively (Administrative Instructions, Section 205(b)).

The amendments must be made in the language in which the international application is to be published.

#### What documents must/may accompany the amendments?

##### Letter (Section 205(b)):

The amendments must be submitted with a letter.

The letter will not be published with the international application and the amended claims. It should not be confused with the "Statement under Article 19(1)" (see below, under "Statement under Article 19(1)").

The letter must be in English or French, at the choice of the applicant. However, if the language of the international application is English, the letter must be in English; if the language of the international application is French, the letter must be in French.

The letter must indicate the differences between the claims as filed and the claims as amended. It must, in particular, indicate, in connection with each claim appearing in the international application (it being understood that identical indications concerning several claims may be grouped), whether

- (i) the claim is unchanged;
- (ii) the claim is cancelled;
- (iii) the claim is new;
- (iv) the claim replaces one or more claims as filed;
- (v) the claim is the result of the division of a claim as filed.

The following examples illustrate the manner in which amendments must be explained in the accompanying letter:

1. [Where originally there were 48 claims and after amendment of some claims there are 51]:  
"Claims 1 to 29, 31, 32, 34, 35, 37 to 48 replaced by amended claims bearing the same numbers; claims 30, 33 and 36 unchanged; new claims 49 to 51 added."
2. [Where originally there were 15 claims and after amendment of all claims there are 11]:  
"Claims 1 to 15 replaced by amended claims 1 to 11."
3. [Where originally there were 14 claims and the amendments consist in cancelling some claims and in adding new claims]:  
"Claims 1 to 6 and 14 unchanged; claims 7 to 13 cancelled; new claims 15, 16 and 17 added." or  
"Claims 7 to 13 cancelled; new claims 15, 16 and 17 added; all other claims unchanged."
4. [Where various kinds of amendments are made]:  
"Claims 1-10 unchanged; claims 11 to 13, 18 and 19 cancelled; claims 14, 15 and 16 replaced by amended claim 14; claim 17 subdivided into amended claims 15, 16 and 17; new claims 20 and 21 added."

**"Statement under article 19(1)" (Rule 46.4)**

The amendments may be accompanied by a statement explaining the amendments and indicating any impact that such amendments might have on the description and the drawings (which cannot be amended under Article 19(1)).

The statement will be published with the international application and the amended claims.

**It must be in the language in which the international application is to be published.**

It must be brief, not exceeding 500 words if in English or if translated into English.

It should not be confused with and does not replace the letter indicating the differences between the claims as filed and as amended. It must be filed on a separate sheet and must be identified as such by a heading, preferably by using the words "Statement under Article 19(1)."

It may not contain any disparaging comments on the international search report or the relevance of citations contained in that report. Reference to citations, relevant to a given claim, contained in the international search report may be made only in connection with an amendment of that claim.

**Consequence if a demand for international preliminary examination has already been filed**

If, at the time of filing any amendments under Article 19, a demand for international preliminary examination has already been submitted, the applicant must preferably, at the same time of filing the amendments with the International Bureau, also file a copy of such amendments with the International Preliminary Examining Authority (see Rule 62.2(a), first sentence).

**Consequence with regard to translation of the international application for entry into the national phase**

The applicant's attention is drawn to the fact that, where upon entry into the national phase, a translation of the claims as amended under Article 19 may have to be furnished to the designated/elected Offices, instead of, or in addition to, the translation of the claims as filed.

For further details on the requirements of each designated/elected Office, see Volume II of the PCT Applicant's Guide.

# PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference <b>A25822 WO</b>	<b>FOR FURTHER ACTION</b> see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. <b>PCT/GB 00/ 03087</b>	International filing date (day/month/year) <b>10/08/2000</b>	(Earliest) Priority Date (day/month/year) <b>25/08/1999</b>
Applicant <b>BRITISH TELECOMMUNICATIONS PUBLIC LIMITED COMPANY</b>		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 4 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

### 1. Basis of the report

- a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international search was carried out on the basis of the sequence listing:

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ Certain claims were found unsearchable (See Box I).

3. ☐ Unity of invention is lacking (see Box II).

4. With regard to the title,

☐ the text is approved as submitted by the applicant.

☒ the text has been established by this Authority to read as follows:

**SYSTEM AND APPARATUS FOR AVOIDING INTERFERENCE BETWEEN FIXED AND MOVEABLE  
BASE TRANSCEIVER STATION**

5. With regard to the abstract,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the drawings to be published with the abstract is Figure No.

☒ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

4

☐ None of the figures.

# INTERNATIONAL SEARCH REPORT

International Application No

GB 00/03087

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 H04B7/185 H04Q7/36

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H04B H04Q

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, INSPEC

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>GB 2 282 299 A (MOTOROLA LTD)  29 March 1995 (1995-03-29)  abstract  page 1, line 25 -page 2, line 17  page 2, line 32-34  page 3, line 14 -page 4, line 4  page 5, line 20-30  page 6, line 8-20  figure 1  claims</p> <p style="text-align: center;">— — — — —  — / —</p>	1, 4, 5, 8

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

### \* Special categories of cited documents :

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the international filing date
- \*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

\*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

\*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

\*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

\*G\* document member of the same patent family

Date of the actual completion of the international search

13 October 2000

Date of mailing of the international search report

20/10/2000

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3016

Authorized officer

Dejonghe, O



## INTERNATIONAL SEARCH REPORT

International Application No

GB 00/03087

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 490 284 A (ISHIKAWA HIROYASU ET AL) 6 February 1996 (1996-02-06) abstract column 1, line 66 -column 2, line 50 column 4, line 16-42 column 10, line 13-22 figure 1 claims	1-8
A	FERNANDEZ E ET AL: "LE TFTS ALCATEL 9810: UN SYSTEME EUROPEEN DE COMMUNICATIONS AIR-SOL" COMMUTATION ET TRANSMISSION, FR, SOTELC. PARIS, vol. 13, no. 4, 1991, pages 5-16, XP000275599 ISSN: 0242-1283 page 6, middle column page 6, right-hand column page 14, middle column	1-8
A	WO 99 12227 A (NOKIA TELECOMMUNICATIONS OY ; TOSSAVAINEN TEPPU (FI); HAAKANA ESA ()) 11 March 1999 (1999-03-11) abstract page 3, line 2-24 page 4, line 14-19 page 4, line 30 -page 6, line 36 page 7, line 22-32 figure 3 claims 1, 2, 4, 7, 8, 10	1, 5
A	GB 2 320 992 A (MOTOROLA INC) 8 July 1998 (1998-07-08) abstract page 2, line 11-19 page 3, line 16-26 page 5, line 3 -page 6, line 10 page 7, line 31 -page 8, line 8 page 9, line 12-29 figure 2	1, 5
A	FR 2 773 931 A (AEROSPATIALE) 23 July 1999 (1999-07-23) page 3, line 3 -page 4, line 31 page 5, line 14-28 page 8, line 33 -page 9, line 8 figure 1	1, 5

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## INTERNATIONAL SEARCH REPORT

International Application No.

GB 00/03087

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0 915 577 A (ROHDE & SCHWARZ) 12 May 1999 (1999-05-12) abstract column 2, line 24 -column 3, line 3 column 3, line 17-22 figure 1 claims 1,2,5	1,5
A	WO 98 26521 A (ERICSSON TELEFON AB L M) 18 June 1998 (1998-06-18) abstract page 3, line 21 -page 5, line 15 page 6, line 7-30 page 10, line 21 -page 11, line 25 figures 1,2,5	1,5
A	WO 94 28684 A (PALMGREN CHRISTER ;NORDICTEL AB (SE); OERNEHOLM FLEMMING (SE)) 8 December 1994 (1994-12-08) abstract page 1, line 1-12 page 2, line 32 -page 3, line 25 page 4, line 25 -page 5, line 17 page 6, line 12-26 page 7, line 8-17 page 7, line 34 -page 8, line 30 page 9, line 20 -page 10, line 3 figure 1 claims 1,5,6,8,9	1,5

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

GB 00/03087

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
GB 2282299	A	29-03-1995	NONE		
US 5490284	A	06-02-1996	JP	2901170 B	07-06-1999
			JP	6338849 A	06-12-1994
WO 9912227	A	11-03-1999	FI	973595 A	04-03-1999
			AU	8982798 A	22-03-1999
			EP	1012901 A	28-06-2000
GB 2320992	A	08-07-1998	FR	2758224 A	10-07-1998
FR 2773931	A	23-07-1999	EP	0932266 A	28-07-1999
			JP	11261468 A	24-09-1999
			NO	990194 A	19-07-1999
EP 0915577	A	12-05-1999	DE	19748899 A	06-05-1999
WO 9826521	A	18-06-1998	US	5950129 A	07-09-1999
			AU	7851298 A	03-07-1998
			BR	9713885 A	29-02-2000
WO 9428684	A	08-12-1994	SE	500443 C	27-06-1994
			AU	6901994 A	20-12-1994
			SE	9301784 A	27-06-1994